National Aeronautics and Space Administration

SEPTEMBER 2014

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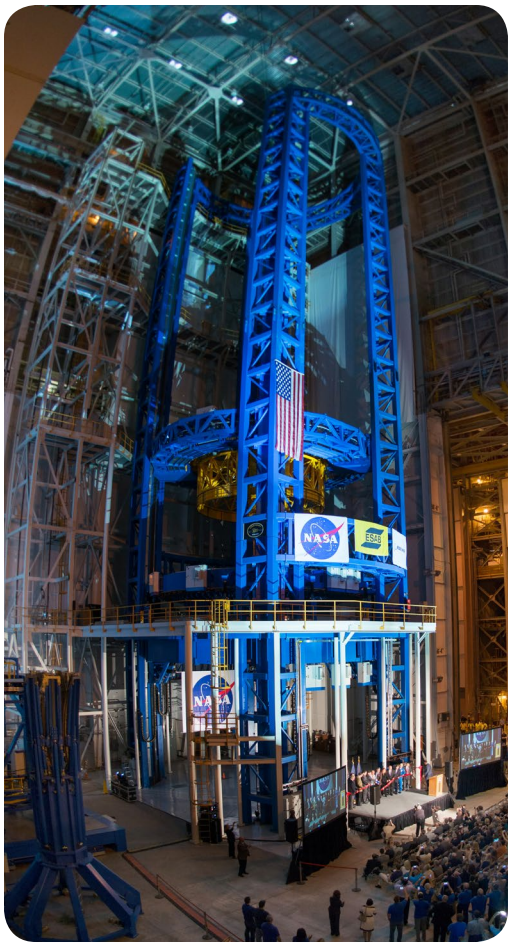
SPACE LAUNCH SYSTEM HIGHLIGHTS

NASA Unveils World's Largest Rocket Welding Tool for Space Launch System (SLS)

The largest rocket welding tool in the world, the Vertical Assembly Center, officially is open for business at NASA's Michoud Assembly Facility in New Orleans. The 170-foot-tall, 78-foot-wide giant completes a world-class welding toolkit that is being used to build the core stage of SLS. For the full story, click **here**. *(NASA/MAF)* ►

◄ NASA, Boeing and state and local officials cut the ribbon on the Vertical Assembly Center. *(NASA/MSFC)*



Avionics Command and Control System Ready for SLS Boosters Qualification Motor Test

Test technicians at ATK's facility in Promontory, Utah, examine the booster aft skirt, which is set up for final validation testing of its avionics command and control system. The new system will be used on a ground static firing of the full-scale booster, Qualification Motor-1, for SLS. NASA and ATK successfully completed the validation with an off-motor aft skirt hot-fire test. This last phase of testing serves as the final confirmation that planning, engineering, scripts, equipment and people are all ready for the upcoming static test, using this newly developed command and control system. ATK is the prime contractor for the boosters for SLS. *(ATK)*

Orion's First Crew Module Complete

The Orion spacecraft crew module (covered by protective foil) and the service module are lifted for the installation of the Orion-to-stage adapter ring at the Neil Armstrong Operations and Checkout Facility at NASA's Kennedy Space Center. Once mated with its Launch Abort System and fully fueled, Orion will be stacked on top of the Delta IV Heavy rocket that will carry it into space on its first flight in December. The SLS program designed and built the adapter at NASA's Marshall Space Flight Center. The adapter will connect the Orion to the Delta IV heavy rocket and the same design will be used to connect the Orion to the SLS rocket. *(NASA/KSC)*

Kathleen Pollard Named to Managerial Position for NASA's Space Launch System

Kathleen Pollard has been named manager of the Program Planning and Control Office for the SLS Program at NASA's Marshall Space Flight Center. As part of her new position, Pollard will be responsible for formulating and implementing all SLS resource plans and an annual budget of $1.6 billion. She also serves as liaison among the SLS Program, Marshall Center and agency to develop resource requirements and implement strict budget and schedule controls in order to deliver a launch vehicle that will fulfill NASA's performance requirements within the target schedule and budget. "I am excited and honored to have the opportunity to be part of the team that's working to launch a safe, sustainable vehicle like SLS to missions unlike we've ever done," Pollard said. For the full story, click **here**. *(NASA/MSFC)*

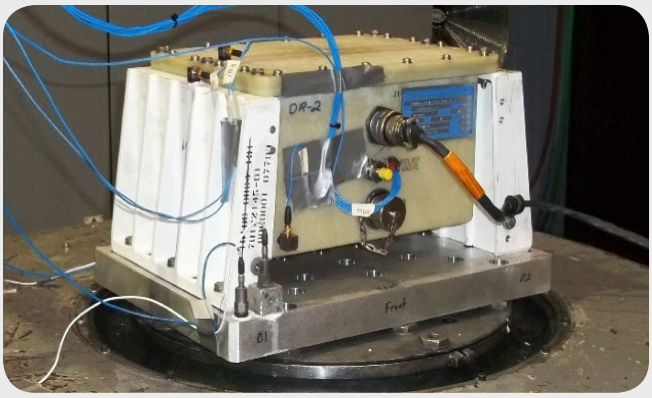
Spaceflight Partners: BST Systems, Inc.

EDITOR'S NOTE: Every month, SLS Highlights turns the spotlight on one of the many industry partners helping to create the largest rocket ever built for human space exploration. In this issue, we profile BST Systems, Inc. of Plainfield, Connecticut.

BST Systems Inc. supports the SLS boosters first stage as a subcontractor to ATK for the development, qualification testing and delivery of batteries for SLS test flights at NASA's Kennedy Space Center.

BST Systems provided batteries for the Space Shuttle Program solid rocket boosters. Working with ATK and NASA's Marshall Space Flight Center, BST has developed a modified space shuttle heritage battery designed to withstand the increased environmental test requirements of the SLS Program. BST developed a ruggedized cell design, and they build test hardware to support the SLS Program schedule. They also worked collaboratively with Marshall Center and ATK team members throughout the development process.

The new battery design utilizes Silver-Zinc Chemistry, a well-proven technology in the launch vehicle industry. The SLS battery consists of 20 series connected nominal 50AH cells housed in a molded nylon battery case. Electrical interface for the battery is provided via two connectors. One connector supplies power to the vehicle. The second connector provides access to individual cell voltages, which is necessary during preflight activation and processing.



A BST Systems SLS development battery is set up for random vibration testing. *(BST Systems)*

This connector also provides prelaunch battery temperature monitoring using a thermistor embedded in the battery. The SLS battery is designed for high reliability in dynamic environments and high-current applications.

Qualification testing of the SLS booster batteries is planned for mid-2015, with production of SLS Exploration Mission-1 (EM-1) and EM-2 flight batteries to follow.

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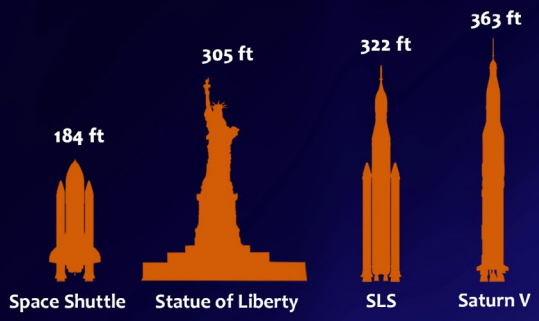
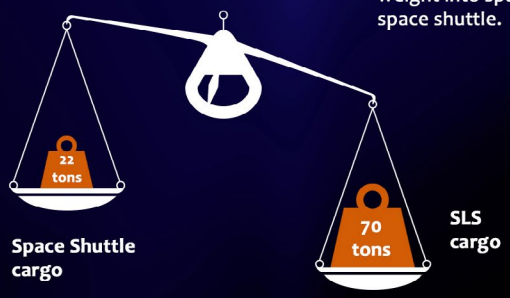
MEET THE ROCKET

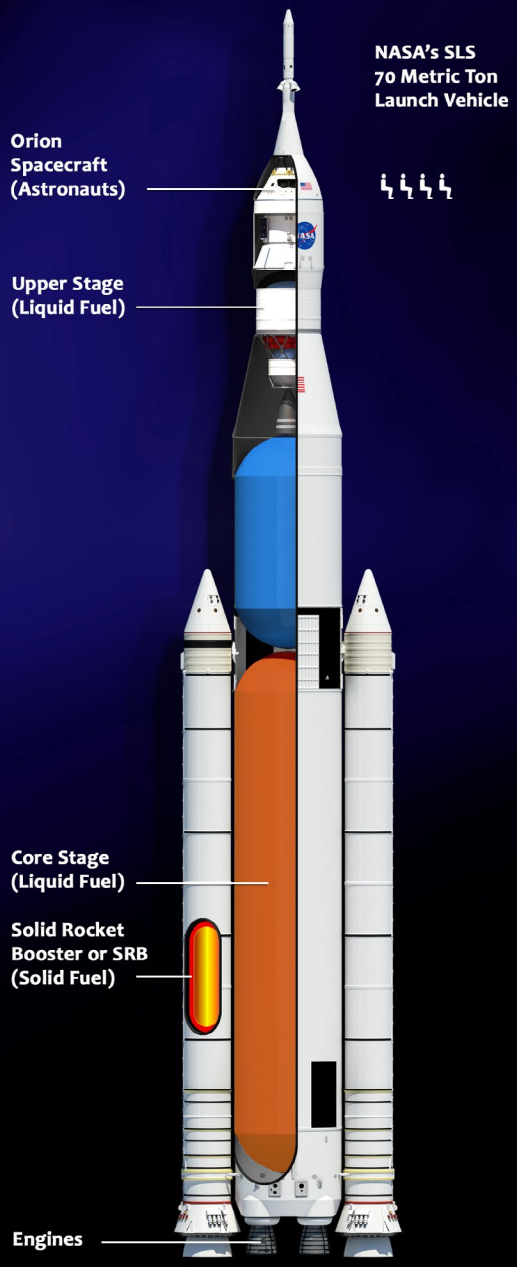
If you wonder how NASA's Space Launch System, or SLS, compares to earlier generations of NASA launch vehicles...



SLS will produce 8% more thrust at launch than the space shuttle and 12% more than the Saturn V.

SLS will launch more than three times as much weight into space as the space shuttle.





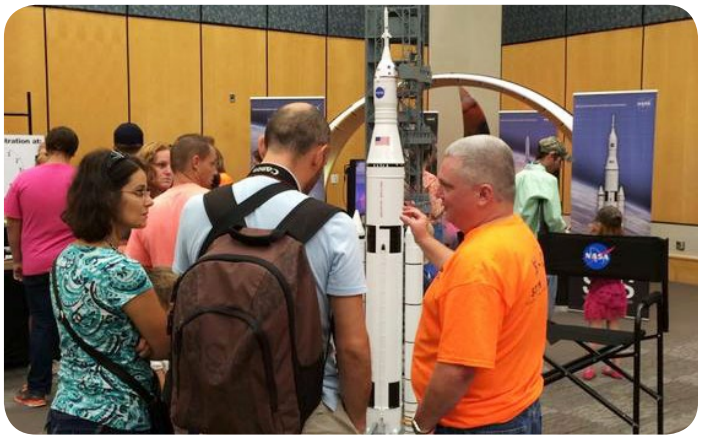
www.nasa.gov/sls #SLSinspires

To see more SLS infographics, click **here**. *(NASA/MSFC)*

SLS On the Road...

NASA astronaut Ricky Arnold talks about SLS on Sept. 9 at the U.S. Department of Education's Back-To-School Bus Tour at the U.S. Space & Rocket Center in Huntsville, Alabama. *(NASA/MSFC)*

A representative from ATK, prime contractor for the SLS boosters, builds paper rockets with participants at the Utah State Fair in Salt Lake City. The event was held Sept. 4-14. *(ATK)*



Andy Warren, right, assistant manager for the SLS Ground Operations Liaison Office at NASA's Marshall Space Flight Center, talks about America's new rocket Sept. 20 at Georgia Southern University's STEM Festival in Statesboro. For more information on Warren's NASA career, click **here**. *(NASA/MSFC)*

The Orion spacecraft inflatable and SLS inflatable on display Sept. 6-7 at the California Capital Airshow in Sacramento. *(Aerojet Rocketdyne)*

SLS on Deck:

- Welding continues at Michoud for SLS core stage
- SLS avionics progress
- Von Braun Symposium

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